

SYLLABUS

INTERNATIONAL EUROPEAN
UNIVERSITY



SCHOOL OF
MEDICINE

HYGIENE AND ECOLOGY

2023




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Discipline 

 HYGIENE AND ECOLOGY

Teacher(s) 

 Candidate of Biological Sciences, Associate Professor Kovalenko Viktoriia Volodymyrivna
Candidate of Medical Sciences, Associate Professor Kopach Kateryna Dmytrivna

Profile of the teacher(s) 

 <https://medicine.ieu.edu.ua/proyemsh/kafedry/kafedra-fundamentalnykh-dystsyplin>

Consultations

Face-to-face consultations

 Fourth Tuesday of the month from 15:00 to 16:00

Online consultations

 Second Tuesday of the month from 15:00 to 16:00


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Discipline page 

 <https://medicine.ieu.edu.ua/proyemsh/kafedry/kafedra-fundamentalnykh-dystsyplin>

Form of final control

test	differentiated test	exam
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1 Brief summary of the discipline

Hygiene and ecology:

- a) is the basis for the use of favourable environmental health factors to improve human health and harden the body;
- b) lays the foundation for students to study the environment as a source of etiological factors and etiological risk factors for the occurrence and spread of diseases;
- c) on the basis of studying the impact of environmental factors on the body and health, lays the foundations for a healthy lifestyle, disease prevention, and the skill of diagnosing diseases.

2 Prerequisite for the course

The discipline "Hygiene and Ecology" has interdisciplinary links with the following disciplines: : "Medical and biological physics. Medical Informatics", "Medical Chemistry", "Medical Biology", "Human Anatomy", "Physiology", "Biological and Bioorganic Chemistry", internal diseases, radiation medicine, medical law, bioethics.

3 Purpose and objectives of the discipline

The purpose of studying the discipline "Hygiene and Ecology" is to study the theoretical foundations of preventive medicine, in particular hygiene and ecology, as sciences that are the basis of the preventive component of the professional outlook of a specialist in the field of medicine.

The main objectives of the discipline are to study the theoretical foundations of hygiene and ecology as sciences (terminology, laws, methods, principles of hygiene regulation, regulatory and methodological support for the application of preventive measures) and to develop practical skills in: prevention of diseases of infectious and non-infectious origin in accordance with the current legislation of Ukraine; preventive and current sanitary supervision; mastering laboratory research methods (organoleptic, physical, chemical, biological).

4 Learning outcomes

PLO 1	Have a thorough knowledge of the structure of professional activity. Be able to carry out professional activities that require updating and integrating knowledge. Be responsible for professional development, the ability to further professional training with a high level of autonomy
PLO 2	Understanding and knowledge of basic and clinical biomedical sciences, at a level sufficient to solve professional problems in the in the field of healthcare
PLO 3	Specialised conceptual knowledge that includes scientific achievements in the field of healthcare and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary issues.
PLO 19	To plan and implement a system of anti-epidemic and preventive measures against the occurrence and spread of diseases among the population
PLO 20	Analyse the epidemiological situation and carry out mass and individual, general and local prevention of infectious diseases
PLO 21	Search for relevant information in professional literature and databases and other sources, analyse, evaluate and apply this information
PLO 23	Evaluate the impact of the environment on human health to assess the state of morbidity of the population



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PLO 24	Organise the necessary level of individual safety (own and the persons under their care) in the event of typical hazardous situations in the individual field of activity.
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5 ECTS Credits

3 ECTS credits / 90 academic hours, of which lectures - 16, practical work - 32, independent work - 42 hours.

6 Structure of the discipline

Titles of content sections and topics	Total hours			
	Total	Among them		
		L.	Pr.	Ind.
SECTION 1 General hygiene and environmental issues				
<i>Content section 1. Introduction to hygiene and ecology. Hygiene and ecology as sciences.</i>				
Topic 1: Hygiene as a science, its purpose, tasks, content, methods of hygiene research	4	1	2	1
Topic 2. History, main stages of development and current state of hygiene state of hygiene	2	1		1
<i>Content section 2. Hygienic significance of the environment and methods of its of its study.</i>				
Topic 3. Hygienic value of solar radiation	4	1	2	1
Topic 4. Hygienic significance of the components of the biosphere (atmosphere, hydrosphere, lithosphere)	3	1		2
Topic 5. Hygienic significance of climate, weather, their impact on health of the population	4		2	2
<i>Content section 3. Hygiene of settlements and housing. Hygiene of the air environment Hygiene of water and water supply, soil hygiene, sanitary cleaning of settlements</i>				
Topic 6. Hygiene of inhabited places. Hygiene of housing. Microclimate, heating, ventilation, natural and artificial lighting, methods of their measurement and hygienic assessment	5	1	2	2
Topic 7. Water hygiene and water supply	5	1	2	2
Topic 8: Soil hygiene and clean-up of settlements	4		2	2
<i>Contents Section 4. Occupational health and safety</i>				
Topic 9: Occupational health and physiology. Methods of hygienic assessment severity and intensity of work, hazards of the labour process. Sanitary legislation in the field of labour protection.	4	1	2	1
Topic 10. Hygienic characteristics of harmful factors of the production environment and the body's response to their effects.	4	1	2	1
SECTION 2 Special hygiene and environmental issues				
<i>Content section 5. Food hygiene</i>				
Topic 11. Nutrition hygiene, its environmental and social problems problems. Methods of assessing the nutritional status of a person, his/her needs for food and energy.	4		2	2
Topic 12: Scientific basis of rational, preventive, therapeutic, dietary and therapeutic and prophylactic nutrition nutrition. Methods of assessing adequate nutrition according to the menu,	3	1		2



SYLLABUS



provision of vitamins				
Topic 13. Physiological and hygienic significance of nutrients and hygienic characteristics of food products. Methods of investigation and prevention of food poisoning	4		2	2
Topic 14: Theoretical aspects and methods of prevention of nutritional and nutritionally related diseases. Hygienic bases of medical, dietary and therapeutic and preventive nutrition	3	1		2
<i>Content section 6. Hygiene of children and adolescents</i>				
Topic 15: Hygiene of children and adolescents. Patterns of growth and development of the child's body. Hygiene of labour, physical, psychophysiological training and education of children and adolescents. Methods of their hygienic assessment.	4	1	2	1
Topic 16. Methods of hygienic assessment of equipment and maintenance of educational institutions for children and adolescents.	3	1		2
Topic 17. Methods of studying age-related psychophysiological features of children and adolescents. Hygienic assessment of the educational regime of children of different age groups.	3		2	1
Topic 18: Methods of hygienic control over the organisation of physical education and labour training of children and adolescents. Medical and professional consultation and medical professional selection of adolescents in school and clinic settings.	2			2
<i>Content section 7. Hygiene of health care facilities. Radiation hygiene.</i>				
Topic 19: Hygienic assessment of the location and layout of individual structural units of the hospital based on the project materials. Features of planning and arrangement of specialised hospitals and departments.	4	1	2	1
Topic 20: Hygienic assessment of the conditions of stay of patients and occupational health of health care workers in health care facilities institutions.	4		2	2
Topic 21. Radiation hygiene, radiation protection in medical facilities and other facilities where sources of ionising radiation are used. Methods and means of radiation control.	4	1	2	1
Topic 22. Calculation methods for assessing radiation safety and parameters of protection against external radiation.	4		2	2
Topic 23: Hygienic assessment of radiation protection of personnel and radiation safety of patients when using ionising radiation in medical institutions.	2			2
<i>Content section 8. Hygiene of emergency situations. Military hygiene</i>				
Topic 24. Organisation and conduct of sanitary and epidemiological supervision over the accommodation, food and water supply of military and civilian formations in emergency situations and during war. Peculiarities of providing food and drinking water to the population in emergency situations and during war.	3	2		2
<i>Content section 9. Healthy lifestyle, personal hygiene and psychohygiene</i>				
Topic 25. Healthy lifestyle and personal hygiene. Physical culture, basics of hardening. Prevention of alcoholism, drug addiction, substance abuse, tobacco smoking.	2			1



SYLLABUS



Topic 26. Concepts of psychohygiene, psychoprophylaxis, medical biorhythmology and chronohygiene, methods of their research and hygienic assessment.	1			1
Topic 27: Hygiene of clothing and footwear. Hygienic assessment of detergents, fabrics and household, industrial and hospital clothing	1			1
Total of the discipline	90	16	32	42

7

List of mandatory tasks

1. History, main stages of development and current state of hygiene.
2. Denaturation of the biosphere. The main sources, types and consequences of anthropogenic pollution of atmospheric air and indoor air
3. Heliometeorological reactions of healthy and sick people. Prevention of heliometeorological reactions: permanent, seasonal, urgent. Influence of weather on the dynamics of air pollution. The concept of temperature inversion.
4. Hygienic and socio-hygienic problems of the modern village. Sanitary and technical equipment of rural housing.
5. Ergonomics. Hygienic requirements for working hours.
6. Features of occupational health at low and high atmospheric pressure. High altitude, mountain, decompression, caisson diseases, their prevention
7. Sanitary legislation on labour protection (Labour Code of Ukraine).
8. Scientific bases of rational, preventive, therapeutic, dietary and therapeutic and preventive nutrition.
9. Theoretical aspects and methods of prevention of nutritional and nutritional diseases.
10. Hygiene of labour, physical, psychophysiological training and education of children and adolescents
11. Hygienic requirements for land, buildings and group sections of children's and general education institutions. Principle of functional zoning and its importance
12. General methodology of current sanitary supervision
13. Sampling and assessment of the fullness and quality of food by the doctor on duty. Organisation and means of objective control over the health of the staff of hospital catering units and their compliance with personal hygiene requirements.
14. Measures of protection against external radiation based on the physical laws of its transmission (protection by quantity, time, distance, shielding).
15. Basic provisions of the "Radiation Safety Standards of Ukraine (IIRBU-97)" and "Basic Sanitary Rules for Radiation Safety of Ukraine (OSRU-2005)"
16. Fundamentals of organisation of sanitary and hygienic measures in emergency situations
17. Food examination in conditions of possible contamination with radioactive and toxic substances and bacterial agents. Stages, forces, means and methods of examination. Scope and capabilities of laboratory research.
18. Hygienic characteristics of the main factors that determine working conditions and prevention of their adverse effects on the body.
19. Hygiene of clothing and footwear. Hygienic evaluation of detergents, fabrics and household, industrial and hospital clothing

8

Selective tasks

1. Create situational test tasks
2. Creating multimedia presentations on the topics of practical classes
4. Creating biological crosswords on the topics of practical classes
5. Participation in student scientific and practical conferences
6. Organising and visiting thematic museums
7. Publication of abstracts of scientific conference reports in co-authorship with a teacher



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9

Signs of discipline

Term of Teaching	Semester	International disciplinary integration	Course (year of study)	Cycles: general training/ vocational training/ free choice
1 semester	IV	Yes	2st	General training

10

Evaluation system and requirements

The current performance of students is assessed on a 4-point scale (2; 3; 4; 5) at each practical taking into account the approved assessment criteria for the relevant discipline. The student must receive a grade for each topic for further conversion of grades into points on a multi-point (200-point) scale.

Criteria for assessing current academic performance:

Excellent ("5") - the student answered 90-100% of the questions correctly. Solves situational problems of increased complexity, is able to summarise the material.

Good ("4") - the student answered 70-89% of the questions correctly. Possesses the necessary practical skills and techniques to perform them to an extent that exceeds the required minimum.

Satisfactory ("3") - the student answered 50-69% of the questions correctly. He/she has only the mandatory minimum of research methods.

Unsatisfactory ("2") - the student answered 50% of the questions correctly. When answering and demonstrating practical skills, he/she makes significant, gross mistakes.

Evaluation of students' independent work in preparation for classroom practical classes is carried out during the current control of the topic at the relevant classroom.

The semester credit is assessed on a two-point scale (passed/not passed) and a 200-point scale by determining the arithmetic mean of the current grades for each practical lesson on a 4-point scale and its subsequent conversion to 200-point scale. The minimum number of points that a student must score is 120.

The final control of knowledge in the discipline "Hygiene and Ecology" is carried out in the form of an exam. The exam in the discipline is conducted in the form of a written test for individual options, each of which contains 3 theoretical questions.

<https://ie.u.edu.ua/docs/rate-of-study.pdf>

11

Conditions for admission to the final control

A condition for student admission to the final control is the absence of missed or completed practical classes, as well as an average current grade of at least 3 points on a 4-point scale / 120 points on a 200-point scale.

<https://ie.u.edu.ua/docs/rate-of-study.pdf>

12

Discipline policy

The study of the discipline "Hygiene and Ecology" requires compliance with the rules that ensure effective mastery of the subject, both in theory and in practice, namely

- regular attendance at lectures and practical classes without absences
- the presence of the teacher and students in the classroom in accordance with the schedule and the established time regulations of classes
- the teacher and students attend classes neatly dressed in appropriate clothing, namely a white coat
- full presentation of the course by the teacher in accordance with the curriculum
- students keep lecture notes and notes on practical classes
- the study of the discipline is based on collegiality, cooperation and solidarity between the teacher and students
- Discussion of educational issues takes place in the form of a discussion between the teacher and students, and students among themselves
- lectures and practical classes, with the exception of the final control of knowledge, involve independent work of students using information technology and means of processing, storing and transmitting information, including computers, personal gadgets and other electronic devices, as well as textbooks,



SYLLABUS



manuals, methodological developments, etc.

- scientific search and research work of students is encouraged
- writing essays on the topics specified in the list of compulsory assignments is a part of the study
- writing essays on the list of topics of optional assignments is desirable and mandatory if a student wants to improve his or her grade
- the topics of the discipline are considered in terms of their practical application and bioethical capacity
- the mutual behaviour of the teacher and students, and students among themselves in the classroom and out of class time complies with generally accepted norms and role models of behaviour that provide for mutual respect and collegiality of relationships, and exclude religious, racial, ethnic, cultural, age, gender, social, political and other prejudices and prejudices, as well as bullying, sexual harassment, and other manifestations and forms of intolerance and humiliation of human dignity
- any manifestations of corruption in the educational process, both on the part of the teacher and students, are unacceptable.

13

Policy on absences and late assignments

A student who, for valid reasons, confirmed by documentary evidence, was not subject to current control has the right to pass the current control within two weeks after returning to study.

A student who was absent from classes without valid reasons, did not participate in the current control activities, did not eliminate academic debt, is not allowed to take the final semester control of knowledge in this discipline, and on the day of the exam, the academic staff member gives the grade "not admitted" in the examination record.

Repeated passing of a differentiated test in the discipline is assigned subject to the completion of all types of educational, independent (individual) work provided for by the working curriculum of the discipline and is carried out in accordance with the schedule of liquidation of academic debt approved by the directorate.

<https://ie.u.edu.ua/docs/050.pdf>

14

Academic integrity policy

Participants in the educational process are guided by the principles of academic integrity

<https://ie.u.edu.ua/docs/011.pdf>

15

Recommended sources of information

Main literature:

1. Hygiene and ecology: a textbook / [V.G. Bardov, S.T. Omelchuk, N.V. Merezhkina, et al: New Book, 2020. 572 p.
2. Hygiene and epidemiology in the system of military medical training and emergency medicine / S. Bondar, T. Gut, R. Gut. - Kyiv: "Medicine", 2018. - 344 p.
3. Fundamentals of ecology and preventive medicine: a textbook / D.O. Lastkov, I.V. Serhita, O.V. Shvydkyi et al: VSV "Medicine", 2017. - 472 p.
4. General hygiene. Social and hygienic monitoring: a textbook for universities / P.I. Melnichenko [et al. - Moscow: Practical Medicine, 2015. 512 p.
5. Fundamentals of ecology: a textbook for students of higher educational institutions / [V.G. Bardov, V.I. Fedorenko E.].
6. M. Biletska and others]; edited by V. G. Bardov, V. I. Fedorenko - Vinnytsia: Nova Knyha, 2013. 424 p.
7. Hygiene with the basics of ecology: a study guide (universities of I-III years of study) / L.V. Dovzhenko, I.K. Lin'kova. - Kyiv: "Medicine", 2017. 49 p.
8. Radiation hygiene / V.O. Murashko, D.S. Mechev, V.G. Bardov et al: Nova Knyha, 2013. - 376 p.

Supporting literature:

1. Infectious diseases: a textbook / V.M. Kozko, G.O. Solomennyk, K.V. Yurko et al.
2. Introduction to the new paradigm of health care. Health and fitness. - Kyiv: Yurka Yubchenkr



SYLLABUS



Publishing House. 2020, 287 c.

3. Healthy lifestyle. Study guide by Olga Ezhova. - Kyiv: University Book, 2017. - 127 p.
4. Dmytrotsa O. The assessment of motor activity of the high school students during COVID-19 pandemic // Health security the cross-border cooperation area of the Poland- Belarus-Ukraine programme (19-21 May 2021, Lutsk).
5. Dmytritsa O. Features of indicators of dental health of smokers depending on the duration of smoking / O. Dmytritsa, I. Kotsan, A. Morenko, S. Shvayko, N. Yanko, A. Poruchynskyi, N. Shevchuk // Wiadomości Lekarskie 2018, tom LXXI, nr 4. - P. 937 (based on the materials of the All-Ukrainian scientific and practical conference with international participation "Poltava Public Health Days", Poltava - 24-25 May 2018.
6. Fundamentals of preventive medicine: textbook / P.S. Bebeshko, Y.S. Skorobekha, O.P. Korinyak. 2nd ed.
7. Hygiene of children and adolescents: a manual for students of higher education institutions of III-IV accreditation levels / edited by M.M. Nadvornyi. Odesa: Press-courier, 2014. 263 c.
8. Electronic manual for studying the course "School hygiene and peculiarities of hygienic education of children and adolescents in specialised institutions" / P.M. Polushkin Donetsk: DNU, 2014. 176 c.
9. Sanitary regulations for general secondary education institutions <https://eo.gov.ua/2020/12/15/novyy-sanitarnyy-rehlament-dlia-shkil-shchozminylosia/>
10. Physical development of the child: a textbook for 3rd year students of the medical faculty / O.G. Ivanko, M.V. Patsera, N.V. Kyzyma [et al: [ZSMU], 2013. 65 c.
11. Indicators of oxygen saturation in the blood of schoolchildren living in radioactively contaminated areas // Scientific and practical conference "Physical factors of the environment and their impact on the formation of public health in Ukraine": Collection of abstracts, Issue 20 // organising committee: A.M. Serdyuk (Chairman) [et al. 2020. 244 c.

Attendance at classes

Dialogue with the teacher on all issues of the curriculum Completion of assignments in accordance with the programme Writing essays on the topics of the programme

Discussion of topics and assignments in groups outside of class time Use of online resources